Summary of DCS Manufacturers Meeting March 22/23, 2004

Peter Woolner
Mitretek Systems
pwoolner@mitretek.org
703-610-1724

Most Of The Proposed Changes Seem To Be Acceptable As Is

- B: 3.1 Format
- C: 3.2 Scrambling
- D: 3.4 Encoder Flush
- E: 3.5 Interleave (?)
- F: 3.7.1 Prohibited Characters (?)
- G: 3.7.2 EOT
- H: 3.8 Max Message
- I: 3.9 Freq Adjust (rt)
- M: 4.3.2 Modulation Stability
- N: 4.4 Phase Noise
- P: 4.5.2 Mid Band Spectrum
- Q: 4.6 Fail-Safe

Non-Agreed Items (1)

- A: 2.1 Timing Accuracy
  - All agreed 300 should be as tight as 1200
  - Most considered ±0.1 s too tight but ±0.5 s was easy
  - The reason cited was the length of time after a GPS fix before shutdown is required
  - Corresponding reduction in message lengths are:

Alloc. Window	Bytes at 300 bps		Bytes at 1200 bps	
	0.1 sec	0.5 sec	0.1 sec	0.5 sec
5 sec	137	107	630	510
10 sec	324	294	1380	1260

Non-Agreed Items (2)

- Frequency Plan, Frequency Stability, and Filters
  - 1200 bps in 1500 Hz, 30 Hz, RRC required
  - 1200 bps in 2250 Hz, ~100 Hz, RRC optional
- Relative effects (if max 20 ch at 1200) are:
  - Loose 20 channels at 300 bps
  - System data rate goes from 97.6 to 93.3 kbps
  - Max msg/hour goes from 170280 to 161280
    (No Int'l chan, 25% 5 sec, 75% 10 sec)

Non-Agreed Items (3)

- Power Control was considered desirable but would be best if control was remote
- Became another item to consider in the DCPI discussion

DCPI

- NTIA is asking questions about the current DCPI link which does not meet their Power Flux Density requirements
- NOAA must respond in a few weeks
- I believe DCPI must be re-designed or it will be lost permanently

Potential Reasons for DCPI

- A revised and improved DCPI link could be used for the following:
  - An alternate timing reference
  - An alternate frequency reference
  - A remote control system including EIRP
  - An easier way to reduce required DCP EIRP (saving battery or prime power consumption)
  - A failure analysis tool
  - A last resort override for NOAA
  - Platform interrogation

Possible Power Reduction Process

- Measure all uplink powers relative to pilot and calculate average
- Notify all users of this average level
- Get 1200 bps users to reduce to avg. level
- Get 300 bps users to reduce to avg. -3 dB
- Repeat until desired level is reached
- ALL users would need to cooperate over the full adjustment period (months or years) unless remote power control is made mandatory

Steps to Implement a New DCPI

- Users decide what they want it to do
- System design and format for how to do it
- Vendors design and estimate costs
- Users decide if the cost is worth the benefits